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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,783	06/24/2003	Yu-Chih Cheng	AOIP0009USA	9531

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NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)  
P.O. BOX 506  
MERRIFIELD, VA 22116

EXAMINER

NORMAN, MARC E

ART UNIT PAPER NUMBER

3744

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/601,783

Applicant(s)

CHENG ET AL.

Examiner

Marc E. Norman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-22 and 25-34 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/24/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 1, 11, 20-22, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al.

As per claims 1 and 20, Suzuki et al. discloses monitoring a rotational speed of a cooling fan (via drive control 22), monitoring a vital temperature of the computer system (via sensors A, B, and C), and setting a fan power based on the temperature wherein when the temperature change is negative, the speed is reduced and when the temperature change is positive, the speed is increased (Figures 8A, 8B).

As per claims 2, 3, 21, and 22, Suzuki et al. discloses the fan speed changes being proportional to the temperature changes (Figures 8A and 8B).

As per claims 10, 11, 27, and 28, Suzuki et al. discloses control application data being stored on RAM 50 and BIOS 14 (Figure 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-9, 12-19, 26, and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Hussain et al.

As per claim 7, Suzuki et al. teaches CPU cooling fan 21 and auxiliary fan 500, and the temperature being obtained from the CPU (via sensor A). Suzuki et al. does not specifically teach sensor A being an on-die thermal monitoring transistor. Hussain et al. teaches a thermal monitoring system controlling fan speed (of fan 160) wherein the vital temperature is obtained from an on-die sensing element (column 2, lines 24-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the on-die sensing element of

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Hussain et al. to the system of Suzuki et al. for the purpose of obtain a more accurate temperature measurement and allowing greater design flexibility (Hussain et al., column 2, lines 33-38).

As per claim 8, Suzuki et al. teaches fan 21 cooling the power supply (Figure 1). As discussed above regarding claim 7, Hussain et al. teaches a thermal monitoring system controlling fan speed wherein the vital temperature is obtained from an on-die sensing element (column 2, lines 24-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the on-die sensing element of Hussain et al. to the system of Suzuki et al. for the purpose of obtain a more accurate temperature measurement and allowing greater design flexibility (Hussain et al., column 2, lines 33-38).

As per claim 9, Suzuki et al. teaches CPU cooling fan 21a, auxiliary cooling fan (21c), and power supply cooling fan (21b) (see Figure 17). See discussions of claims 7 and 8, above, regarding the on-die sensor.

As per claims 12 and 29, Suzuki et al. discloses cooling fan 21, fan input-output module 22, interface 18, controller 16, and temperature transducers A, B, and C. Suzuki et al. does not specifically teach the interface being a chipset interface. However, chipset interfaces are common and well-known in the art of computer control systems. Hussain et al., for example, teaches a thermal monitoring system controlling fan speed comprising interface chipset 120. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the chipset 120 of Hussain et al. to the system of Suzuki et al. for the purpose of facilitating communication between the controller and the CPU (See Figure 1 of Hussain et al.).

As per claims 13 and 30, Suzuki et al. teaches system memory 13.

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As per claims 14, 15, 31, and 32, Suzuki et al. teaches control application data being stored on RAM 50 and BIOS 14 (Figure 1).

As per claims 16, 17, 26, and 33 see discussions of claims 7 and 8, above.

As per claim 18, see discussion of similar claim 9, above.

As per claims 19 and 34, Suzuki et al. teaches user interface with input/display for receiving control references to control parameters to generate the fan control signal (Figure 24).

Claims 6 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Chu et al.

As per claims 6 and 25, Suzuki et al. does not specifically discuss the fan speeds being a percentage of a detected maximum fan speed/power. Chu et al. teaches a system for controlling a CPU fan herein the fan has a maximum speed/power and the fan settings are based according to a fraction of that maximum speed (column 5, lines 34-46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply this fan control arrangement of Chu et al. to the system of Suzuki et al. for the simple purpose of calibrating the fan speeds according to a maximum fan speed.

#### ***Allowable Subject Matter***

Claims 4, 5, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 703-305-2711. The examiner can normally be reached on Mon.-Fri., 8:00-5:30, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN

A handwritten signature in black ink, appearing to read 'Marc Norman', with a stylized, flowing script.

**MARC NORMAN  
PRIMARY EXAMINER**